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ALGANSEA MONTICOLA, A NEW CYPRINID FISH
FROM THE PACIFIC SLOPE OF CENTRAL MEXICO

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During the summer of 1963, eight series totaling 630 specimens of an undescribed cyprinid were taken by us from the headwaters of the Río Colotlán and the Río Juchipila, northern tributaries to the Río Grande de Santiago on the Pacific slope of the states of Zacatecas and Jalisco. Subsequent study revealed it to be a member of the genus *Algansea*, a small group widely distributed in the Lerma-Santiago river system and contiguous waters.

Algansea monticola new species
(Figs. 1-3)

Holotype: Tulane University no. 40869, a male 69.9 mm in standard length, collected from the Río Juchipila in Zacatecas near the town of Jalpa at the Highway 70 bridge about one mile east of the intersection with Highway 41, 30 June 1963, by Clyde D. Barbour and Salvador Contreras.

Paratypes: Tulane University no. 30611, 62 specimens bearing the same data as the holotype, now distributed as follows: British Museum of Natural History, no. 1967. 10. 3. 1-2, 2 specimens; Facultad de Ciencias Biológicas, Universidad de Nuevo León, Monterrey, N. L., México, no. FCB 1015, 2 specimens; Field Museum of Natural History, no. 74773, 2 specimens; Instituto Nacional de Investigaciones Biológico Pesqueras, Laboratorio Biológico, México, D. F., no. LBT 235, 2 specimens; Tulane University, 49 specimens; University of Michigan, Museum of Zoology, no. 184359, 3 specimens; United States National Museum, no. 202161, 2 specimens.

The following collections from the State of Zacatecas are also designated as paratypes: Río Juchipila at Mal Paso 16 mi. E Ciudad Garcia Salinas, TU 30608 (81 specimens) including UMMZ 184356 (5), 28



FIG. 1. *Algansea monticola*, TU 40869, holotype, male, 69.9 mm in standard length.

June 1963. Tributary to Río Juchipila 5 mi. S Villanueva on Hwy. 41, TU 30609 (141 specimens) including UMMZ 184357 (10), 28 June 1963. Tributary to Río Juchipila at Tabasco, TU 30610 (21) including UMMZ 184358 (3), 29 June 1963.

Other specimens: Zacatecas. Reservoir behind dam across tributary to Río Colotlán 1.5–2 mi. S Tepechitlan, TU 30604 (1), 26–27 June 1963. Tributary to Río Colotlán 2 mi. N Momax, TU 30605 (51), 27 June 1963. Tributary to Río Colotlán 2 mi. S Tepetongo, in small pool at foot of dam, TU 30607 (13), 28 June 1963. Jalisco. Río Colotlán at Santa Maria de los Angeles, TU 30606 (259) including UMMZ 184354 (15), 27 June 1963.

Diagnosis: A small species (maximum length about 90 mm S. L.) which can be distinguished from all other known members of its genus by characteristically having 7 rather than 8 or more rays in the dorsal fin.

Description: Body robust, caudal peduncle relatively deep; snout blunt, not overhanging upper lip; mouth oblique, included; maxillary barbels rarely absent; eyes small; fins moderate, fleshy; scales small, imbedded in small specimens; 6 to 11 gill rakers on first arch; pharyngeal teeth 4–4.

Morphometric data for the holotype and four paratypes are given in table 1. Combined counts for specimens from the Río Juchipila and the Río Colotlán are as follows (the value including the holotype is italicized): median lateral scales (206 specimens), 56 (in 2), 57 (3), 58 (5), 59 (7), 60 (11), 61 (14), 62 (19), 63 (29), 64 (23), 65 (19), 66 (23), 67 (11), 68 (13), 69 (12), 70 (4), 71 (8), 72 (3); pectoral rays (220 specimens), 11 (1), 12 (0), 13 (1), 14 (2), 15 (42), 16 (113), 17 (56), 18 (5); dorsal rays (234 specimens), 7 (213), 8 (21); anal rays (230 specimens), 6 (8), 7 (217), 8 (5); total number of gill rakers on the first arch (234 specimens), 6 (9), 7 (70), 8 (77), 9 (64), 10 (12), 11 (2); total number of vertebrae including the four fused vertebrae and counting the urostyle as one (77 specimens), 33 (3), 34 (1), 35 (6), 36 (40), 37 (25), 38 (2). The number of pores entering the cephalic lateral line system were counted in 40 specimens as follows: supratemporal pores 4 (1), 5 (7), 6 (6), 7 (10), 8 (11), 9 (5); supraorbital pores 7 (2), 8 (19), 9 (10), 10 (9) entering the left canal, 7 (4), 8 (19), 9 (13), 10 (4) entering the right canal; infraorbital pores 14 (2), 15 (7), 16 (12), 17 (11), 18 (7), 19 (1) left and 11 (1), 14 (1), 15 (4), 16 (9), 17 (13), 18 (7), 19 (2), 20 (3) right; preoperculo-mandibular pores 9 (3), 10 (11), 11 (16), 12 (5), 13 (5), 14 (1) left and 8 (2), 9 (3), 10 (8), 11 (19), 12 (4), 13 (4) right. Occasionally canals were found to be disfigured; most commonly the supratemporal was divided at the midline into separate left and right halves.

Color: Color variable but always dull. Dorsally, *A. monticola* is dusky grey to grey-brown. A dark, narrow stripe extends along the middorsal line from the nape to the caudal fin. Laterally, along the side of the body but generally dorsal to the lateral line, a diffuse rust-orange band

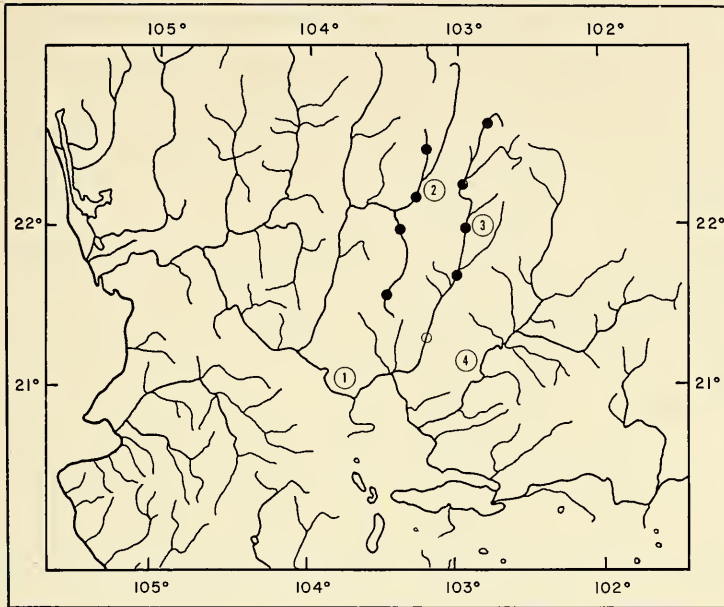


FIG. 3. Known distribution of *Algansea monticola*. 1. Río Grande de Santiago; 2. Río Colotlán; 3. Río Juchipila; 4. Río Verde. The closed circles represent collection sites; the open circle the location of the town of Moyahua de Estrada.

may be present between the dorsal margin of the operculum and the midbase of the caudal fin. A small black spot is always present at the latter point. The spot fades in alcohol and may be obscure in large, preserved specimens. The ventral coloration is dirty white.

Etymology: The name *monticola* (Latin) means "a dweller in the mountains" and alludes to the rugged nature of the area in which the species occurs.

Sexual dimorphism: Although differences between the sexes have not been reported for this genus, we found that breeding males had noticeably longer pectoral fins than did the females (fig. 2). Also, many of the males had well developed breeding tubercles. These were minute, white protuberances scattered over the top of the head and body, the dorsal surface of the pectoral fins and on the dorsal and anal fins. No differences in coloration were observed.

Ecology: *Algansea monticola* is ubiquitous in those parts of the headwaters of the Río Juchipila and Río Colotlán sampled. The species was taken over mud, sand, gravel and rocks, in open water and under banks, in swift water and in pools and impoundments. The water temperature

varied between 19°C and 27°C. The species was not associated with any particular type of vegetation.

The fact that larger females carried large eggs and that testes and tubercles were well developed in males suggests that spawning takes place in late June and early July. The rust-orange coloration was probably a reflection of spawning activity, although no collections have been made at other times of the year. Turbid water precluded any behavior observations.

Associated with *Algansea monticola* was a sucker, *Moxostoma congestum* (Baird and Girard), a chub, *Hybopsis alta* (Jordan), a poeciliid, *Poeciliopsis infans* (Woolman), a goodeid, *Goodea* sp., and two centrarchids, *Chaenobryttus gulosus* (Cuvier) and *Micropterus salmoides* (Lacépède). The latter two species were taken in the reservoir south of Tepechitlan and are introduced. No catfish were taken although they were probably present.

Relationship: *Algansea monticola* is most similar to *A. barbata* (Alvarez and Cortés, 1964), a form found in the headwaters of the Río Lerma, and an undescribed species from Nayarit (R. R. Miller, ms.). All three have barbels, few gill rakers and are small. It is probable, however, that each evolved independently from a common stock and that the similarities reflect adaptations to like environments. The eleven nominal species of *Algansea* and *A. monticola* are currently under study by the senior author and Robert R. Miller of the University of Michigan.

Distribution: *Algansea monticola* has been collected from the headwaters of the Río Juchipila and the Río Colotlán (fig. 3). A collection was made on 30 June 1963 in the Río Juchipila at Moyahua de Estrada, Zacatecas, at an elevation slightly below 1,200 meters, yielded only *Moxostoma congestum* (Baird and Girard), *Cyprinus carpio* Linnaeus, *Hybopsis alta* (Jordan), a catfish, *Ictalurus pricei* (Rutter), and a cichlid, *Cichlasoma* sp., suggesting that the new species is absent from the lower reaches of this river. Briggs and Miller (1960) made no mention of it occurring in the Río Grande de Santiago. *Algansea Monticola* has not been taken in the Río Verde to the east; its limits of distribution in the tributaries to the west of the Río Juchipila remain unknown.

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TABLE 1. Measurements¹ of *Algansea monticola* expressed as thousandths of the standard length.

Sex	Holotype TU 40869		Paratypes TU 30611			Mean
	♂	♀	♂	♀	♀	
Standard length (mm)	69.9	68.3	62.5	54.6	60.6	63.2
Head length	272	265	250	269	262	264
Postorbital head length	140	142	130	150	140	140
Orbit length	53	47	47	53	53	50
Snout length	84	76	77	77	79	79
Upper jaw length	72	70	67	71	74	71
Fleshy interorbital width	100	92	91	103	96	96
Head width	179	179	150	158	167	167
Snout to dorsal origin	539	556	526	555	563	548
Snout to pelvic origin	555	548	531	548	559	548
Snout to anal origin	721	741	711	723	728	725
Greatest body length	273	268	251	267	282	268
Depth at occiput	183	179	171	183	178	179
Greatest body width	173	209	155	179	196	182
Caudal peduncle depth	136	124	136	132	134	132
Caudal peduncle length	216	214	206	216	218	214
Dorsal base	107	95	115	95	94	101
Anal base	86	75	93	88	83	85
Depressed dorsal length	225	187	227	211	198	210
Depressed anal length	176	143	192	172	162	169
Pectoral length	207	154	208	161	162	178
Pelvic length	143	122	158	132	130	137

¹ As described in Hubbs and Lagler (1947).

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